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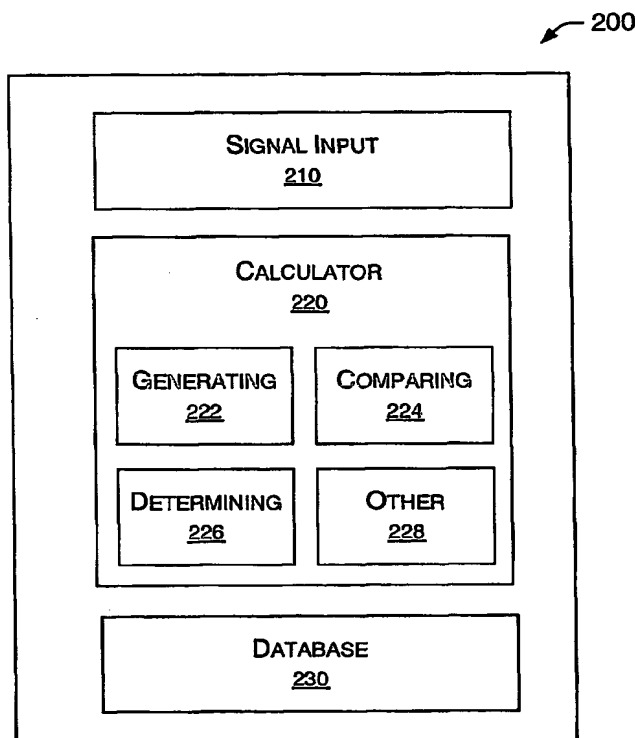
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[Continued on next page]

(54) Title: **WAFER CHARACTERISTICS VIA REFLECTOMETRY****EXEMPLARY DEVICE**

(57) Abstract: Various exemplary methods (800, 900, 1000, 1100) are directed to determining wafer thickness and/or wafer surface characteristics. An exemplary method (900) includes measuring reflectance of a wafer and comparing the measured reflectance to a calculated reflectance or a reflectance stored in a database. Another exemplary method (800) includes positioning a wafer on a reflecting support to extend a reflectance range. An exemplary device (200) has an input (210), analysis modules (222-228) and optionally a database (230). Various exemplary reflectometer chambers (1300, 1400) include radiation sources positioned at a first altitudinal angle (1308, 1408) and at a second altitudinal angle (1312, 1412). An exemplary method includes selecting radiation sources positioned at various altitudinal angles. An exemplary element (1650, 1850) includes a first aperture (1654, 1854) and a second aperture (1658, 1858) that can transmit reflected radiation to a fiber and an imager, respectfully.

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**Declarations under Rule 4.17:**

— as to the identity of the inventor (Rule 4.17(i)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ,

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# INTERNATIONAL SEARCH REPORT

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PCT/US03/07804

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 21/00

US CL : 156/345.24; 483/8

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 156/345.15, 345.16, 345.24, 345.25; 216/85; 483/8, 16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
East

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,747,201 A (NAKAYAMA et al) 05 May 1998 (05.05.98), see entire document.	1-58



Further documents are listed in the continuation of Box C.



See patent family annex.

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document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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